

Appl. No. 09/987,164  
Amdt. Dated September 12, 2005  
Reply to Office action of July 13, 2005

**Amendments to the Claims:**

This listing of the claims replaces all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. [Currently Amended] A system for hybrid electronic/photonic switching of traffic in a node of a communications network, the system comprising:
  - a plurality of interfaces adapted to translate respective traffic streams between corresponding electronic and optical signals, the plurality interfaces comprising:
    - at least one working interface; and
    - at least one protection interface, a number of the protection interfaces being selected based on a probability of failure of a working interface;
  - an electronic cross-connect (EXC) adapted to selectively map an electronic signal through from a selected first one of the interfaces to a selected second one of the interfaces; and
  - a photonic cross-connect (PXC) adapted to selectively couple an respective optical signals between the each selected interface and a selected ones of at least two a plurality of optical channels of the communications network.
2. [Cancelled]
3. [Previously Presented] A system as claimed in claim 1, wherein a number of working interfaces corresponds with a number of working channels of the communications network.
4. [Original] A system as claimed in claim 3, wherein each working interface is adapted to translate between an electronic signal and a corresponding optical signal having a substantially fixed predetermined wavelength.

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5. [Original] A system as claimed in claim 4, wherein the predetermined wavelength is determined during provisioning of the interface in accordance with a design of the communications network.
6. [Original] A system as claimed in claim 5, wherein the predetermined wavelength corresponds with a channel wavelength of at least one working channel of the network.
7. [Original] A system as claimed in claim 4, wherein at least one working interface comprises a narrow-band laser adapted to generate an optical signal having the predetermined wavelength.
8. [Original] A system as claimed in claim 4, wherein at least one working interface comprises a tunable laser adapted to generate an optical signal having the predetermined wavelength.
9. [Cancelled]
10. [Previously Presented] A system as claimed in claim 1, wherein each protection interface is adapted to translate between an electronic signal and a corresponding optical signal having a selected wavelength.
11. [Original] A system as claimed in claim 10, wherein the selected wavelength is dynamically selected from a set of channel wavelengths of the network.
12. [Original] A system as claimed in claim 10, wherein each protection interface comprises either one or both of:
  - a wide-band optical detector adapted to detect an optical signal having a wavelength corresponding to any channel wavelength of the network; and
  - a laser adapted to generate an optical signal having the selected wavelength.
13. [Original] A system as claimed in claim 12, wherein the laser is a narrow-band laser adapted to generate an optical signal having the selected wavelength.

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14. [Previously Presented] A system as claimed in claim 12, wherein the laser is a tunable laser adapted to generate an optical signal having the predetermined wavelength.
15. [Cancelled]
16. [Original] A system as claimed in claim 15, wherein the control system comprises:
  - a first detector adapted to detect a failure of a working interface;
  - a selector adapted to select a protection interface for translating the respective traffic stream of the failed working interface;
  - an EXC controller adapted to control the EXC to re-map the respective electronic signal of the traffic stream through the selected protection interface; and
  - a PXC controller adapted to control the PXC to couple the respective optical signal of the traffic stream between the selected protection interface and a respective optical channel through which the traffic stream is being conveyed.
17. [Original] A system as claimed in claim 15, wherein the control system further comprises a tuner adapted to tune the selected protection interface to the predetermined wavelength of the failed working interface.
18. [Original] A system as claimed in claim 15, wherein the control system comprises:
  - a second detector adapted to detect a failure of a working channel of the communications network;
  - a second selector adapted to select an alternate optical channel through which a traffic stream being conveyed by the failed channel can be carried; and
  - a PXC controller adapted to control the PXC to couple the respective optical signal of the traffic stream between the selected interface and the selected alternate optical channel.